

What is claimed is:

1. A hydraulic pump comprising:

a housing having top and bottom sides;

first and second cylinders positioned parallel to one another within the housing and extending from adjacent the top side of the housing toward the bottom of the side of the housing;

pistons disposed in the cylinders for reciprocating movement in the cylinders;

first and second parallel piston rods extending upwardly from the pistons through the first and second cylinders with free ends extending out the top side of the housing;

a crank fulcrum disposed with respect to the top side of the housing;

a crank pivotally mounted on the crank fulcrum having tines extending away from one side of the crank fulcrum and attaching to the free ends of the first and second piston arms and an inner arm extending in the opposite direction;

a push rod attached at one end to the inner arm of the crank, the push rod extending downwardly from a point of attachment to the crank above the top side of the housing to a point below the bottom side of the housing;

a bottom side fulcrum positioned with respect to the bottom side of the housing; and

an actuation lever pivotally mounted in the bottom side fulcrum and attached at one end to a free end of the push rod.

2. A hydraulic pump as set forth in claim 1, further comprising:

separate outlets from the first and second cylinders from points in the cylinders nearest the bottom side of the housing; and

a feed reservoir providing working fluid to the first and second cylinders through inlets to the cylinders at points above the outlets, the reservoir extending from one side of the housing to be fitted between a dash panel and a vehicle exterior side.

3. A hydraulic pump as set forth in claim 2, further comprising:

a foot pedal connected to the end of an actuation lever opposite the point of attachment of the actuation lever to the push rod.

4. A hydraulic pump as set forth in claim 3, wherein the outlets from the hydraulic pump are connected to first and second brake system pilot circuits.

5. A vehicle comprising:

a dash panel;

a front wall spaced forward from the dash panel;

a brake fluid reservoir positioned between the dash panel and the front wall;

a cylinder housing mounted on an opposite face of the dash panel from the brake fluid reservoir;

first and second cylinders inside the cylinder housing disposed parallel to one another and upright with respect to vehicle orientation;

first and second pistons disposed for reciprocating movement up and down inside the first and second cylinders, respectively;

first and second piston rods extending upwardly from the first and second pistons, having free ends extending above the cylinder housing;

a crank fulcrum mounted on a top side of the cylinder housing;

a forked crank pivotally mounted in the crank fulcrum, the forked crank having first and second tines extending away from one side of the crank fulcrum which attach to free ends of the first and second piston rods and an arm extending in the opposite direction;

a push rod extending vertically parallel to the cylinders attached at one end to the arm of the forked crank;

a lever attached at one end to the end of the push rod opposite the end of the push rod attached to the arm of the forked crank; and

a pump fulcrum extending from a bottom side of the cylinder housing in which the lever is pivotally mounted.

6. A vehicle as set forth in claim 5, further comprising:

first and second outlets from the first and second cylinders, respectively;

a power brake module; and

first and second pilot circuits coupling the first and second outlets, respectively, to the power brake module.

7. A vehicle as set forth in claim 6, further comprising:

the first and second outlets extending through the dash panel.

8. A dual circuit pilot master cylinder for a brake system, comprising:

a cylinder housing having top and bottom sides and fittings for attachment of the cylinder housing to a vehicle dash panel;

a pair of cylinders in the cylinder housing which are disposed to be parallel to one another and to extend vertically into the cylinder housing from adjacent one of the sides of the cylinder housing;

a pair of pistons, a different one of which is disposed in each cylinder for reciprocating motion; and

a linkage including a foot actuated lever coupled to the pair of pistons for imparting to the pistons plunging motion into the cylinders.

9. A dual circuit pilot master cylinder for a brake system as set forth in claim 8, further comprising:

the pair of cylinders extending from adjacent the top side of the cylinder housing into the housing toward the bottom side.

10. A dual circuit pilot master cylinder for a brake system as set forth in claim 9, the linkage further including:

a crank fulcrum positioned with respect to the top side of the cylinder housing;

a lever fulcrum positioned with respect to the bottom side of the cylinder housing;

a crank having opposing ends mounted for pivoting movement in the crank fulcrum;

piston rods extending from the pistons out of the cylinders for connection to ends of the crank on one side of the crank fulcrum;

a lever mounted in the lever fulcrum having ends on opposed sides of the lever fulcrum;

a push rod extending from below the bottom side of the cylinder housing to above the top side of the cylinder housing and connected at opposite ends to free ends of the lever and the crank, respectively; and

a pedal disposed on the end of the lever opposite the end connected to the push rod.

11. A dual circuit pilot master cylinder for a brake system as set forth in claim 10, further comprising:

a working fluid reservoir; and

couplings between the working fluid reservoir and the cylinders extending through the dash panel.